

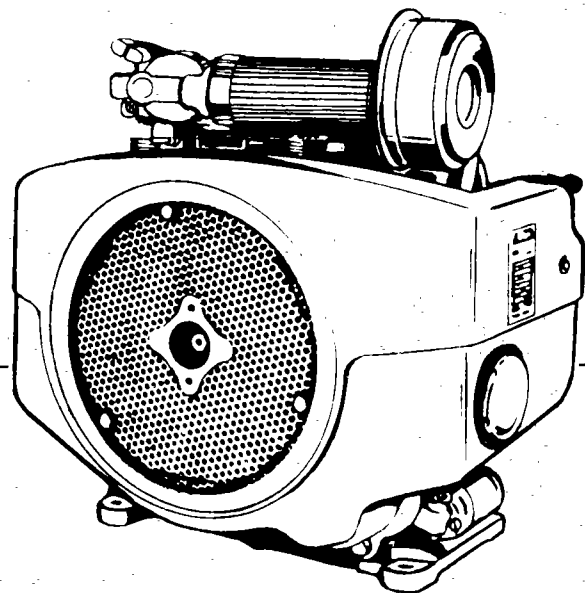
The following catalog
has gaps in its page
numbers, or doesn't
have any numbers.
We have chosen to
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order that Acrobat
assigns it.

McGRAW-EDISON

Onan

Parts Manual

**NHP/NHPV
Engine**



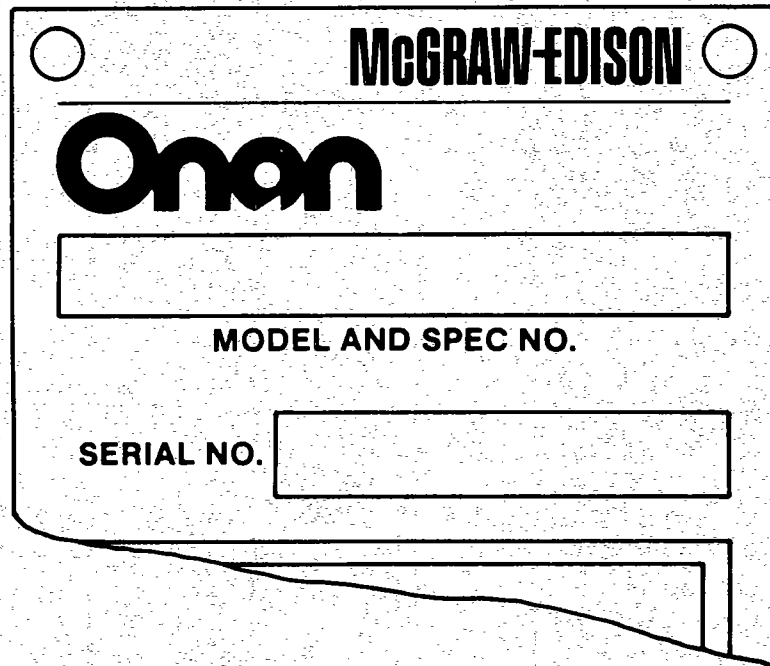
GENERAL INFORMATION

For parts or service, contact the dealer from whom you purchased this equipment or refer to your Nearest Authorized Onan Parts and Service Center.

To avoid errors or delay in filling your parts order, please furnish all information requested.

Always refer to the nameplate on your unit.

1. Always give the MODEL, SPEC NO. and SERIAL NO.



The form is a rectangular label with rounded corners, featuring the McGraw-Edison logo at the top and the Onan logo below it. There are two circular punch holes at the top corners. Below the Onan logo is a large rectangular box for the model and specification number. Below that is a smaller rectangular box for the serial number, preceded by the text 'SERIAL NO.'. The form is designed to be attached to a piece of equipment, with a tab at the bottom right for easy removal.

McGRAW-EDISON

Onan

MODEL AND SPEC NO.

SERIAL NO.

M-1149

For handy reference, insert "YOUR" nameplate information in the spaces above.

2. Do not order by reference number; always use part number and description.
3. Give the part number, description and quantity needed of each item. If an older part cannot be identified, return the part prepaid to your dealer or nearest Onan Parts and Service Center. Print your name and address plainly on the package. Write a letter to the same address stating the reason for returning the part.
4. State definite shipping instructions. Any claim for loss or damage to your unit in transit should be filed promptly against the transportation company making the delivery. Shipments are complete unless the packing list indicates items are back ordered.

PARTS CATALOG

This catalog applies to the standard NHP and NHPV Engines as listed below. Parts are arranged in groups of related items. Each illustrated part is identified by a reference number corresponding to the same reference number in the parts list for that group. Parts illustrations are typical. Using the *Model* and *Spec No.* from the nameplate, select the *Parts Key No.* (1, 2, etc., in the last column) that applies to your *Engine*. This *Parts Key No.* represents parts that differ between models. Unless otherwise mentioned in the description, parts are interchangeable between models. Right and left sides are determined by facing the blower end (front) of the engine.

ENGINE DATA TABLE

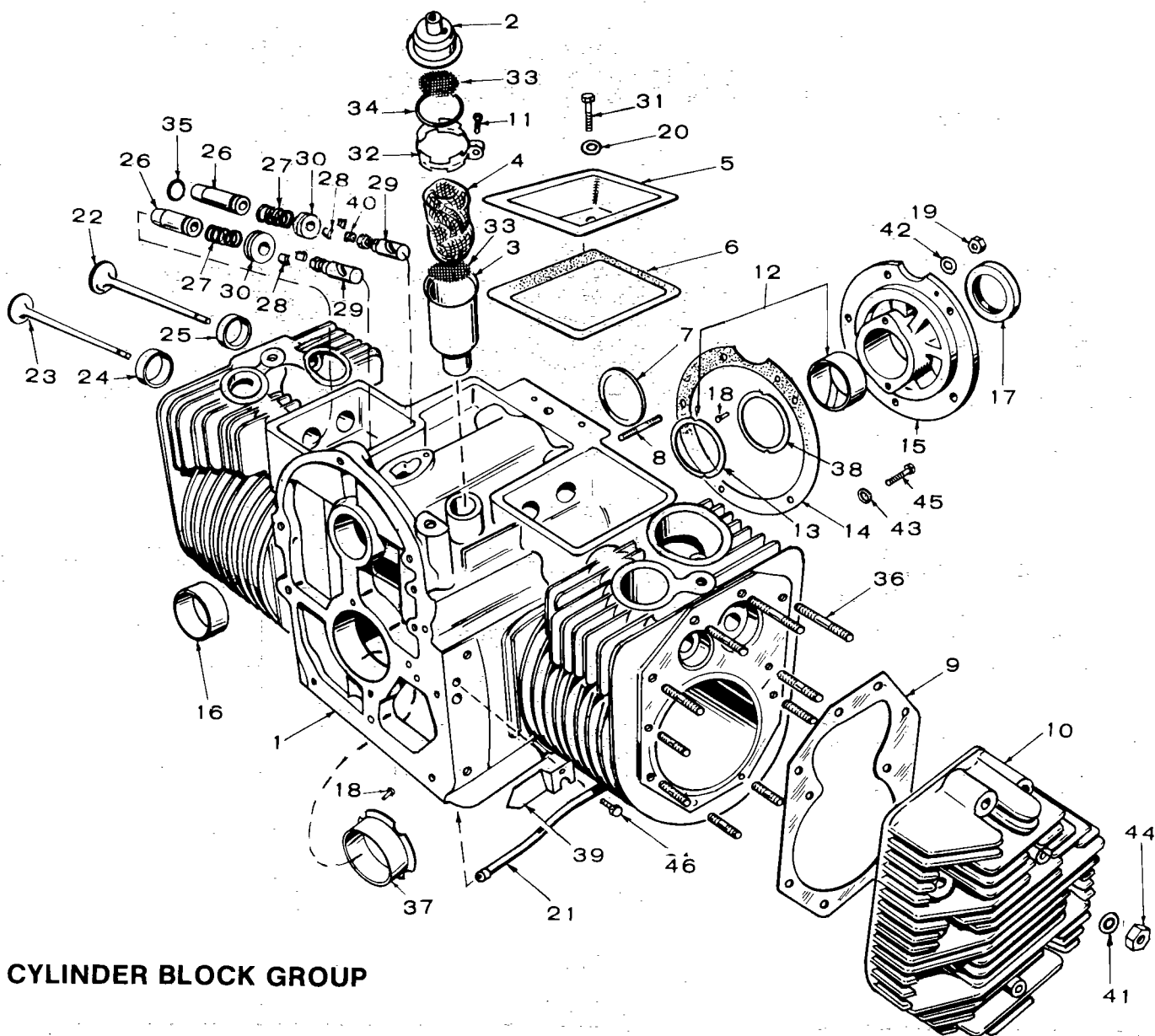
MODEL AND SPEC NO. £	PARTS KEY NO.	MODEL AND SPEC NO. £	PARTS KEY NO.
NHP-MS/*	1	NHPV-MS/*	2

£ - The Specification Letter Advances (A to B, B to C, etc.) with manufacturing changes.

* - The factory code number portion of the specification number indicates standard equipped engines and/or customer selected optional equipment.

NOTICE!

ITEMS REFERENCED AS **OPTIONAL** INDICATE PART IS FACTORY INSTALLED AND MAY NOT BE APPLICABLE TO ALL MODELS. FOR FIELD CONVERSIONS ADDITIONAL PARTS ARE USUALLY REQUIRED.



CYLINDER BLOCK GROUP

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION	REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	£	1	Block Assembly, Cylinder (Includes Parts Marked *)	14	101-0415	1	*Gasket, Bearing Plate
2	123-0954	1	Cap and Valve, Breather	15	*PLATE, BEARING - REAR		
3	123-0952	1	*Tube, Breather		101-0439	1	Standard
4	123-0865	1	Baffle, Breather Tube		101-0417	1	Special (Use with Reduction Gear Assembly)
5	110-1624	2	Cover, Valve Compartment	16	101-0405	2	*Bearing, Camshaft
6	110-1720	2	Gasket, Valve Cover	17	509-0041	1	*Seal, Oil - Crankshaft
7	517-0048	1	*Plug, Expansion	18	516-0072	4	*Pin, Bearing Stop
8	520-0736	5	*Stud, Bearing Plate Mounting	19	104-0091	5	*Nut, Hex (3/8-24)
9	110-1731	2	Gasket, Cylinder Head	20	526-0063	2	Washer, Flat - Copper (17/64" I.D. x 7/16" O.D. x 1/32" Thick)
10	HEAD, CYLINDER			21	120-0680	1	*Tube, Oil - Crankcase
	110-1912	1	Right Side	22	110-1974	2	Valve, Intake
	110-1913	1	Left Side	23	110-2282	2	Valve, Exhaust
11	809-0035	1	Screw, Tapping - Round Head (#8 x 3/4")	24	INSERT, VALVE SEAT - EXHAUST		
12	BEARING, CRANKSHAFT REAR				110-1716	2	*Standard
	101-0450	1	*Standard		110-1716-02	2	.002" Oversize
	101-0450-02	1	.002" Undersize		110-1716-05	2	.005" Oversize
	101-0450-10	1	.010" Undersize		110-1716-10	2	.010" Oversize
	101-0450-20	1	.020" Undersize		110-1716-25	2	.025" Oversize
	101-0450-30	1	.030" Undersize				
13	104-0575	AR	*Washer, Thrust - Crankshaft Bearing				

£ - Order by description, giving complete Model, Spec and Serial Number.

AR - Quantity As Required.

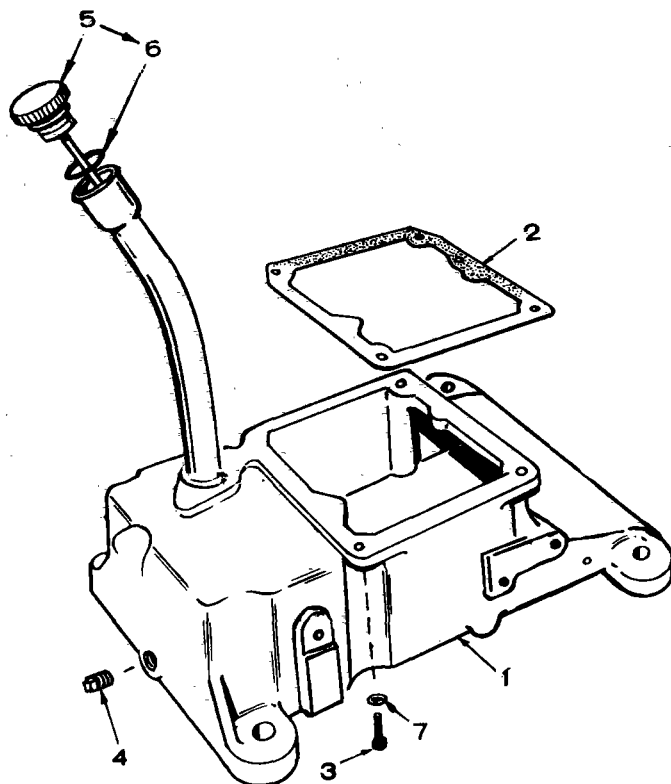
* - Parts included in Cylinder Block Assembly.

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
25	INSERT, VALVE SEAT - INTAKE		
	110-1933	2	*Standard
	110-1933-02	2	.002" Oversize
	110-1933-05	2	.005" Oversize
	110-1933-10	2	.010" Oversize
	110-1933-25	2	.025" Oversize
26	*GUIDE, VALVE		
	110-3168	2	Intake
	110-3167	2	Exhaust
27	110-0539	4	Spring, Valve
28	110-0639	8	Lock, Valve Spring
29	TAPPET, VALVE		
	115-0006	4	Standard
	115-0006-05	4	.005" Oversize
30	110-0893	4	Washer, Valve Spring Retainer
31	800-0011	2	Screw, Cap - Hex Head (1/4-20 x 2")
32	123-0951	1	Clamp, Loop - Breather Tube Cap
33	123-0958	2	Screen, Breather Tube
34	509-0117	1	Seal, "O" Ring - Breather Tube
35	110-0068	2	*Gasket, Valve Guide (Intake)
36	STUD, CYLINDER HEAD MOUNTING		
	520-0717	8	3/8 x 1-7/8"
	520-0837	12	3/8 x 2-5/16"

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
37	BEARING, CRANKSHAFT - FRONT (FLANGED)		
	101-0432	1	*Standard
	101-0432-02	1	.002" Undersize
	101-0432-10	1	.010" Undersize
	101-0432-20	1	.020" Undersize
	101-0432-30	1	.030" Undersize
38	104-0776	AR	Shim, Crankshaft Thrust (.005")
39	160-1190	1	Pointer, Timing - Key 2
40	509-0168	2	Seal, Intake Valve Spring
41	851-0025	20	Washer, Lock - Spring (3/8") -Special
42	526-0251	5	Washer, Flat (.406" I.D. x .688" O.D. x .1345" Thick)
43	526-0066	2	Washer, Flat - Copper (25/64" I.D. x 9/16" O.D. x 1/16" Thick)
44	104-0091	20	Nut, Hex (3/8-24)
45	800-0046	2	Screw, Cap - Hex Head (3/8-16 x 3/4")
46	821-0010	1	Screw, Cap - Self Locking (1/4-20 x 1/2")

* - Included in Cylinder Block Assembly.

OIL BASE GROUP



REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	£	1	Base, Oil
2	102-1200	1	Gasket, Base
3	800-0051	4	Screw, Cap - Hex Head (3/8-16 x 1-1/4")
4	505-0056	1	Plug, Drain
5	123-1298	1	Cap and Indicator, Oil Fill
6	509-0142	1	Gasket, Oil Fill Cap ("O" Ring)
7	850-0050	4	Washer, Lock - Spring (3/8")

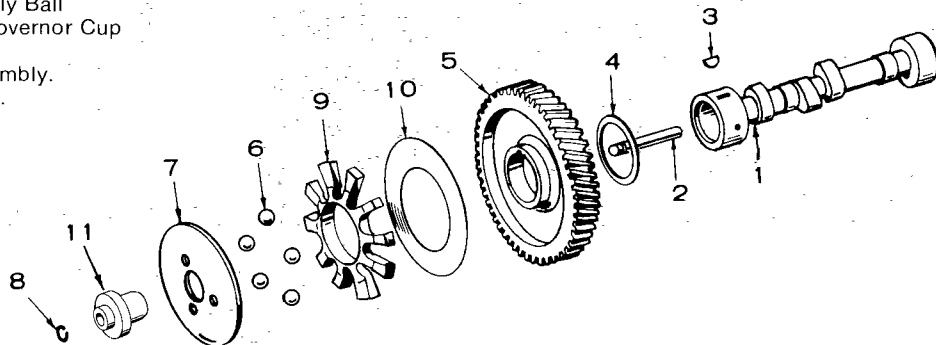
£ - Order by description, giving complete Model, Spec and Serial Number.

CAMSHAFT GROUP

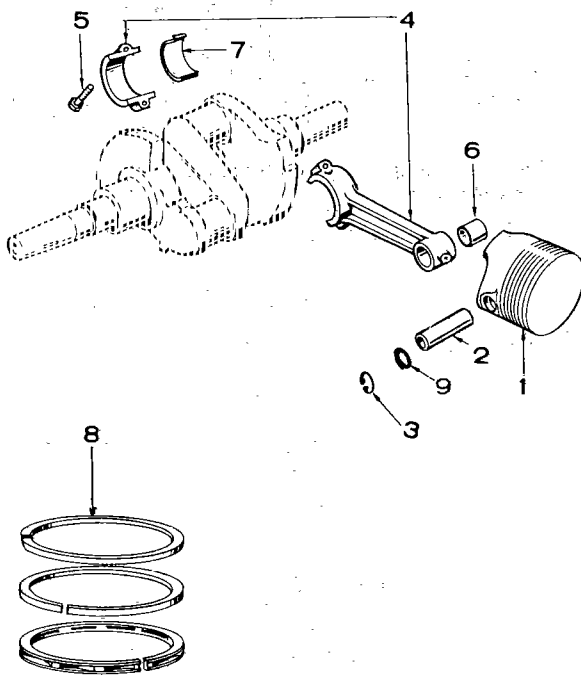
REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	105-0382	1	Camshaft (Includes Parts Marked *)
2	105-0075	1	*Pin, Camshaft
3	515-0001	1	Key - Camshaft Gear
4	105-0451	1	Washer, Thrust
5	105-0332	1	Gear, Camshaft (Includes Parts Marked †)
6	510-0015	5	Ball, Fly - Governor
7	150-1520	1	Cup, Governor
8	150-0078	1	Ring, Retaining
9	150-1257	1	†Spacer, Fly Ball
10	150-0077	1	†Plate, Fly Ball
11	150-1519	1	Hub, Governor Cup

* - Parts Included in Camshaft Assembly.

† - Parts Included in Camshaft Gear.



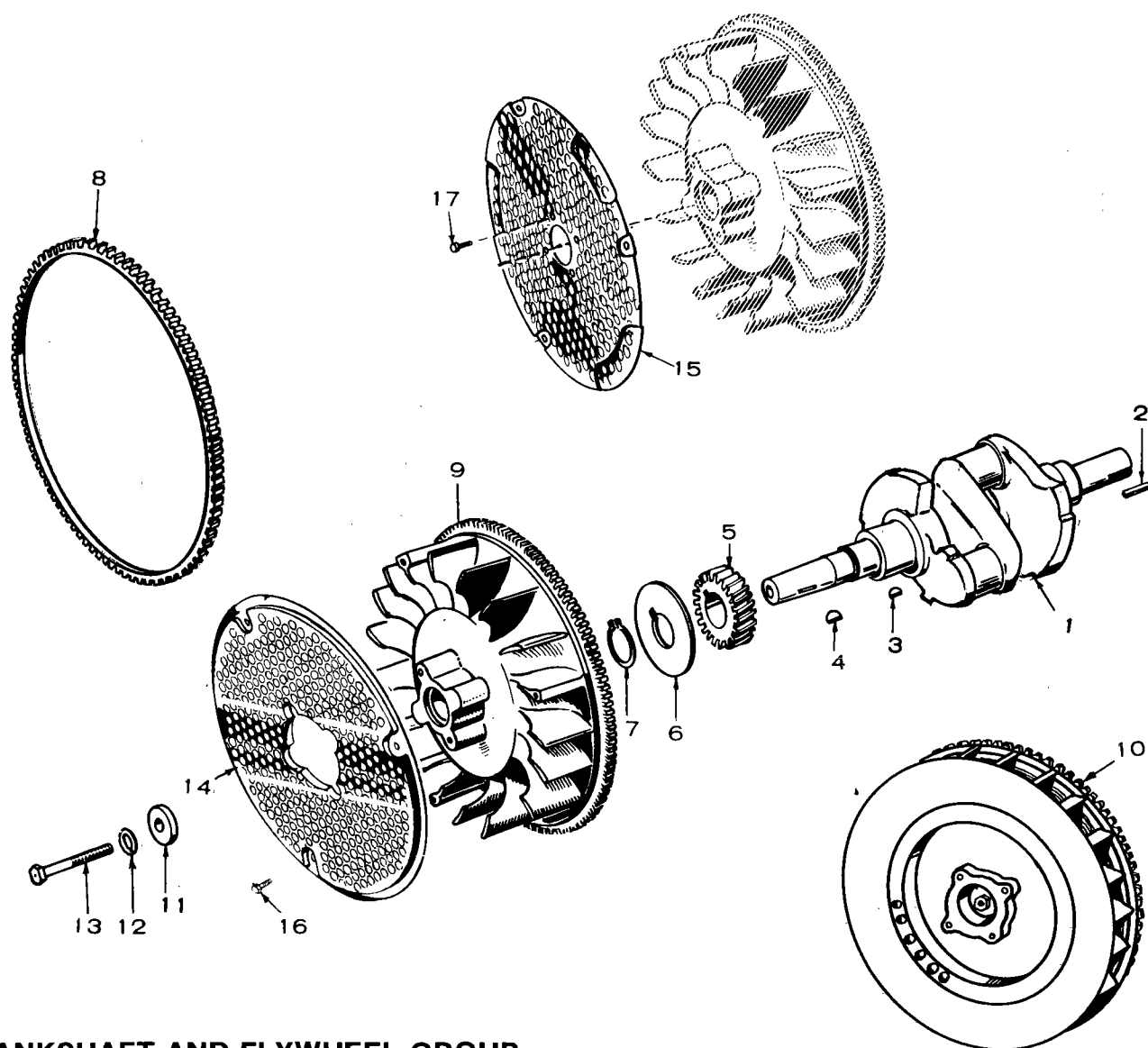
PISTON AND ROD GROUP



REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	PISTON AND PIN SET (Includes Parts Marked *)		
	112-0141	2	Standard
	112-0141-05	2	.005" Oversize
	112-0141-10	2	.010" Oversize
	112-0141-20	2	.020" Oversize
	112-0141-30	2	.030" Oversize
	112-0141-40	2	.040" Oversize
2	PIN, PISTON		
	112-0112	2	*Standard
3	518-0294	4	*Ring, Retaining - Piston Pin
4	114-0203	2	Rod Assembly, Connecting (Includes Parts Marked †)
5	805-0010	4	†Bolt, Rod Cap
6	114-0036	2	†Bushing, Piston Pin
7	BEARING, HALF-CONNECTING ROD		
	114-0188	4	Standard
	114-0188-02	4	.002" Undersize
	114-0188-10	4	.010" Undersize
	114-0188-20	4	.020" Undersize
	114-0188-30	4	.030" Undersize
8	RING SET, PISTON		
	113-0166	2	Standard
	113-0166-05	2	.005" Oversize
	113-0166-10	2	.010" Oversize
	113-0166-20	2	.020" Oversize
	113-0166-30	2	.030" Oversize
	113-0166-40	2	.040" Oversize
9	851-0026	2	*Washer, Wave - Spring

* - Parts Included in Piston and Pin Set.

† - Parts Included in Connecting Rod Assembly.



CRANKSHAFT AND FLYWHEEL GROUP

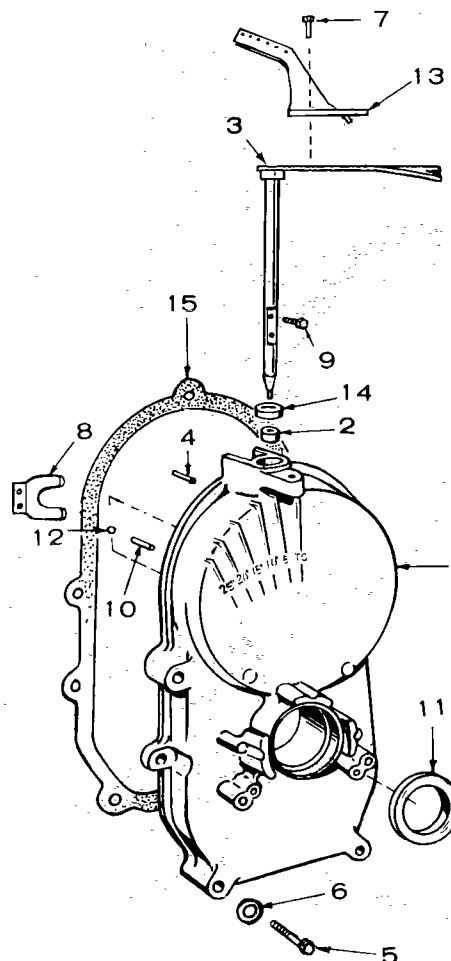
REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION	REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	*	1	Crankshaft	11	526-0262	1	Washer, Flat (15/16" I.D. x 1.50" O.D. x .31" Thick)
2	515-0198	1	Key, Crankshaft Stub	12	850-0055	1	Washer, Lock - Spring (7/16")
3	515-0001	1	Key, Crankshaft Gear	13	104-0170	1	Screw, Flywheel Mounting - Special
4	515-0227	1	Key, Flywheel	14	134-2433	1	Guard, Flywheel - Key 1
5	104-0032	1	Gear, Crankshaft	15	134-2384	1	Guard, Flywheel - Key 1 - Optional
6	104-0043	1	Washer, Gear Retaining	16	821-0010	3	Screw, Cap - Hex Self Locking (1/4-20 x 1/2") - Key 1
7	518-0014	1	Ring, Retaining - Gear	17	821-0014	4	Screw, Cap - Hex Self Locking (5/16-18 x 1/2") - Key 1 Optional
8	134-0673	1	Gear, Ring				
9	FLYWHEEL ASSEMBLY - KEY 1						
	134-2464	1	With Ring Gear				
	134-2462	1	With Ring Gear and Optional Charging Alternator Rotor (15 Amp Phelon)				
	134-2467	1	With Ring Gear and Optional Charging Alternator Rotor (20 Amp Synchro)				
10	FLYWHEEL ASSEMBLY - KEY 2						
	134-2768	1	With Ring Gear				
	134-2770	1	With Ring Gear and Optional Charging Alternator Rotor (15 Amp Phelon)				
	134-2769	1	With Ring Gear and Optional Charging Alternator Rotor (20 Amp Synchro)				

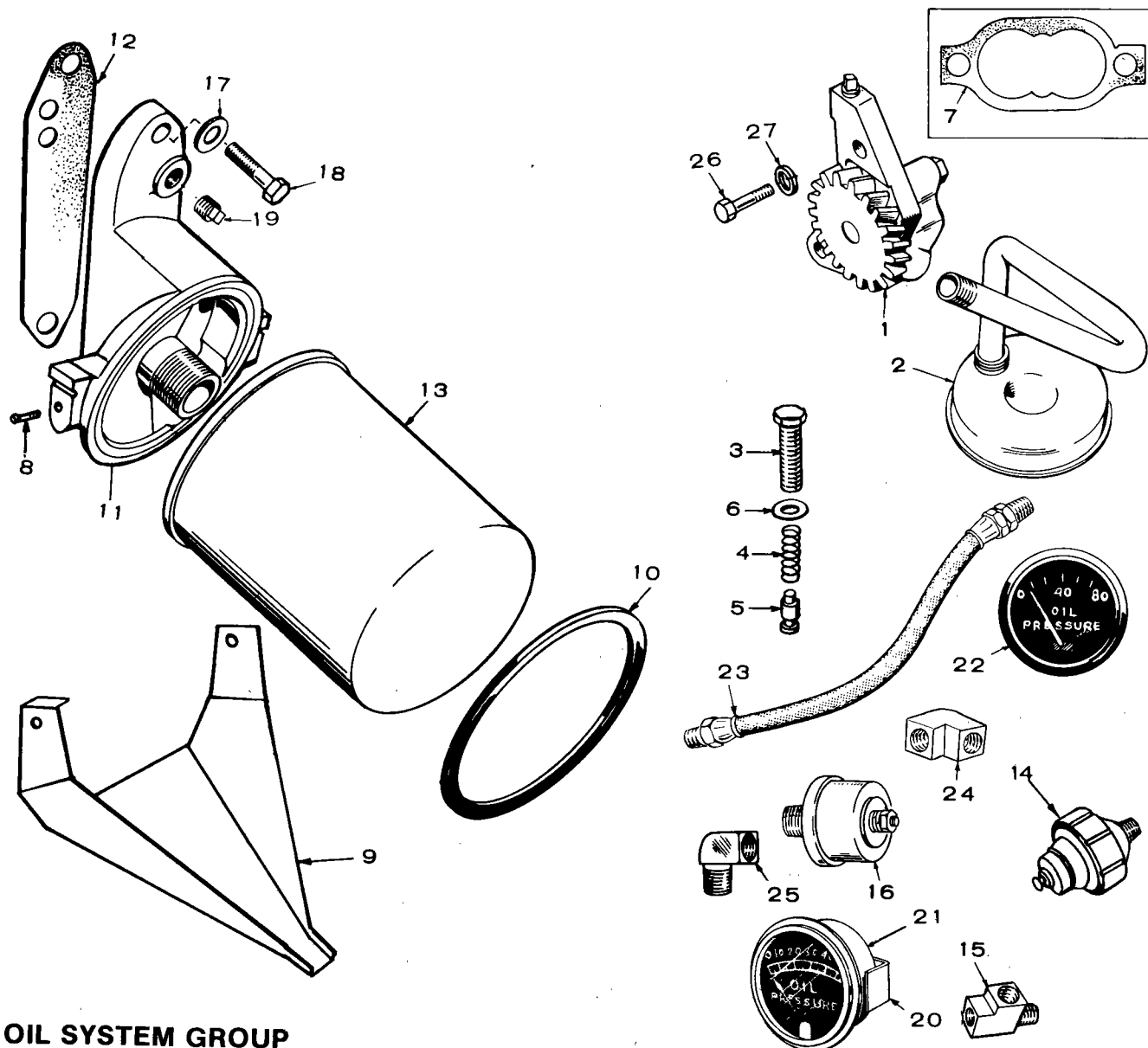
* - Order by Description, giving Model, Spec and Serial Number.

GEARCASE GROUP

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	GEARCASE ASSEMBLY		
	103-0472	1	Key 1 (Includes Parts Marked *)
	103-0474	1	Key 2 (Includes Parts Marked *)
	103-0475	1	Optional Side Pull Governor - - Key 1 (Includes Parts Marked *)
	103-0387	1	Optional - Manual Throttle Control Engines (Includes Crankshaft Oil Seal - Key 1)
	103-0446	1	Optional - Manual Throttle Control Engines (Includes Crankshaft Oil Seal - Key 2)
2	510-0105	1	*Bearing, Upper - Governor Shaft
3	SHAFT AND ARM, GOVERNOR		
	150-1450	1	Key 1
	150-1451	1	Key 2
	150-1453	1	Optional Side Pull - Key 1
4	516-0011	2	Pin, Roll - Gearcase Alignment
5	SCREW, CAP - HEX HEAD		
	800-0032	4	5/16-18 x 1-3/4"
	800-0034	1	5/16-18 x 2-1/4"
6	526-0065	5	Washer, Flat - Copper (21/64" I.D. x 9/16" O.D. x 1/16" Thick)
7	815-0181	1	Screw, Cap - Hex Head W/ET - Tapping (#10-32 x 1/2")
8	150-1187	1	*Yoke, Governor Shaft
9	815-0046	2	*Screw, Machine - Pan Head (#8-32 x 3/8")
10	516-0130	1	*Pin, Roll
11	509-0040	1	*Seal, Oil - Crankshaft
12	510-0014	1	*Bearing, Ball
13	150-1073	1	Extension, Governor Arm - Key 1
14	509-0008	1	*Seal, Oil - Governor Shaft
15	103-0408	1	Gasket, Gearcase

* - Parts Included in 103-0472, 103-0474 and 103-0475 Gearcase Assemblies.





OIL SYSTEM GROUP

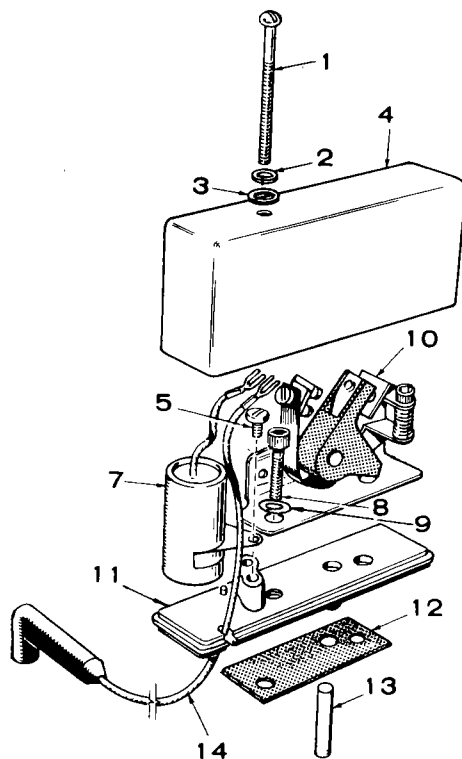
REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	120-0491	1	Pump, Oil (Components Not Sold Separately)
2	120-0648	1	Intake, Oil Pump
3	801-0050	1	Screw, Cap - Hex Head (3/8-24 x 1")
4	120-0140	1	Spring, By-Pass Valve
5	120-0398	1	Valve, By-Pass
6	526-0066	1	Washer, By-Pass Valve
7	120-0161	1	Gasket Kit, Oil Pump
8	815-0194	2	Screw, Cap - Hex Head - Tapping W/ET (#10-32 x 3/8")
9	DRAIN, OIL		
	122-0352	1	Key 1
	122-0360	1	Key 2
10	122-0347	1	Seal, Air - Oil Filter
11	122-0320	1	Adapter, Oil Filter
12	122-0321	1	Gasket, Adapter Mounting
13	122-0323	1	Filter, Oil
14	309-0237	1	Switch, Low Oil Pressure

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
15	502-0058	1	Tee, Low Oil Pressure Switch - Optional
16	193-0108	1	Sender, Oil Pressure - Optional
17	526-0065	2	Washer, Flat - Copper (21/64" I.D. x 9/16" O.D. x 1/16" Thick)
18	800-0028	2	Screw, Cap - Hex Head (5/16-18 x 1")
19	505-0057	1	Plug, Pipe (1/8")
20	193-0031	1	Clamp, Meter - Optional
21	193-0068	1	Gauge, Oil Pressure (Includes Clamp) - Optional
22	193-0107	1	Gauge, Oil Pressure - Electrical (Includes Clamp) - Optional
23	501-0004	1	Line, Flexible - Oil - Optional
24	502-0005	1	Elbow, Pipe - Oil Line - Optional
25	502-0020	1	Elbow, Pipe - Oil Line - Optional
26	800-0007	2	Screw, Cap - Hex Head (1/4-20 x 1")
27	850-0040	2	Washer, Lock - Spring (1/4")



REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	166-0641	1	Bracket, Coil Mounting
2	503-0311	2	Clamp, Coil Mounting
3	167-0240	2	Plug, Spark
4	167-1463	1	Cable, Spark Plug - Left Side (19")
5	167-1462	1	Cable, Spark Plug - Right Side (16-3/4")
6	166-0535	1	Coil, Ignition
7	332-0592	1	Jumper - Optional
8	308-0140	1	Switch, Toggle - Ignition
9	302-0270	1	Clamp, Meter - Optional
10	302-0060	1	Ammeter - Optional
11	812-0082	2	Screw, Machine - Round Head Cross Recessed (#8-32 x 3/4")
12	850-0025	2	Washer, Lock - Spring (#8)
13	860-0008	2	Nut, Hex (#8-32)
14	332-1043	1	Jumper, Terminal
15	332-0604	1	Block, Terminal
16	332-1273	1	Strip, Marker
17	821-0004	2	Screw, Cap - Hex Self Locking (#10-32 x 5/16")
18	334-0028	1	Lead (48" of #16 Insulated Wire)
19	301-3751	1	Bracket, Terminal Block
20	167-0188	1	Clip, Cable
21	338-0619	1	Harness, Wiring - Starter Solenoid to Terminal Block
22	336-2132	1	Lead, Terminal Block to Ignition Coil

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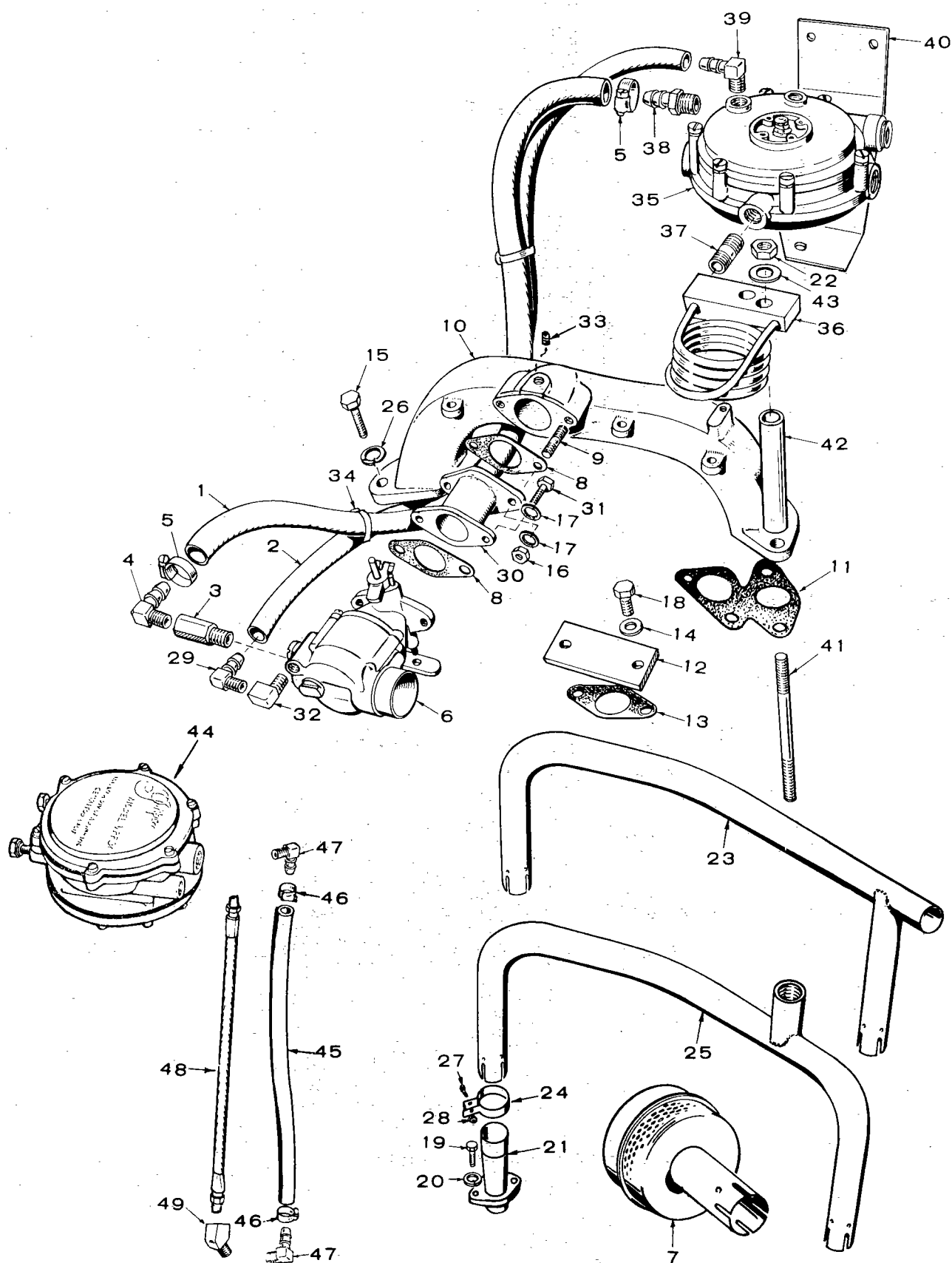


BREAKER BOX GROUP

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
	160-1303	1	Box Assembly, Breaker (Includes parts marked *)
1	812-0108	1	*Screw, Machine - Round Head (#10-24 x 1-1/2")
2	850-0030	1	*Washer, Lock - Spring (#10)
3	526-0008	1	*Washer, Flat (13/64" I.D. x 7/16" O.D. x 1/32" Thick)
4	160-1176	1	*Cover, Breaker Box
5	815-0358	1	*Screw, Tapping - Hex Head (#8-32 x 5/16")
7	312-0244	1	*Condenser, Ignition (30 Mfd.)
8	802-0034	2	*Screw, Cap - Socket Head (1/4-20 x 3/4")
9	850-0038	2	*Washer, Lock - Spring (1/4")
10	160-1183	1	*Point Assembly, Breaker
11	160-1219	1	*Base, Breaker Box
12	160-1150	1	*Gasket, Breaker Box
13	160-1151	1	Plunger, Breaker Point Assembly
14	336-2385	1	Lead, Breaker Points to Coil
	160-1311	1	Kit, Tune-Up (Includes Points and Condenser)

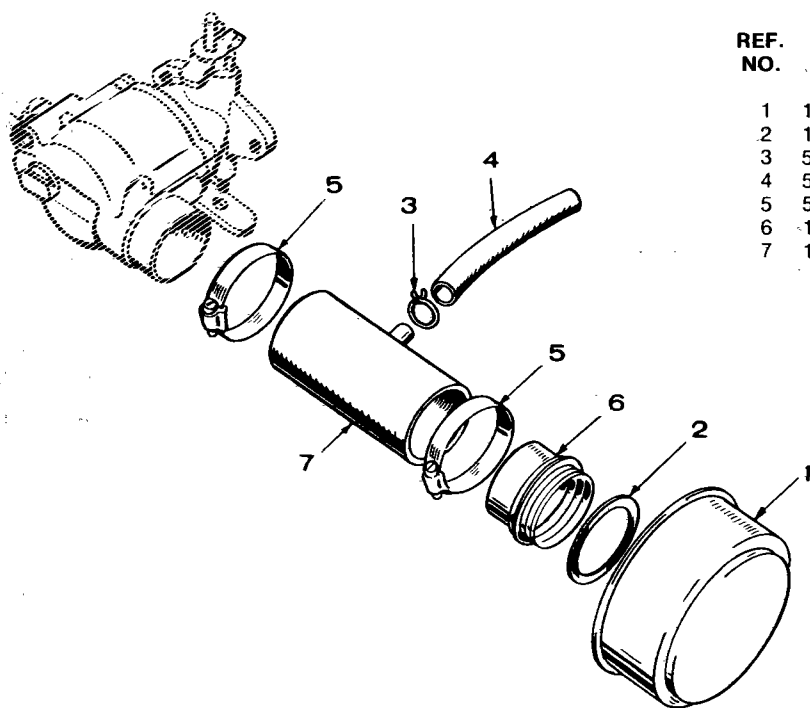
* - Included in 160-1303 Breaker Box Assembly.

FUEL & EXHAUST SYSTEMS GROUP



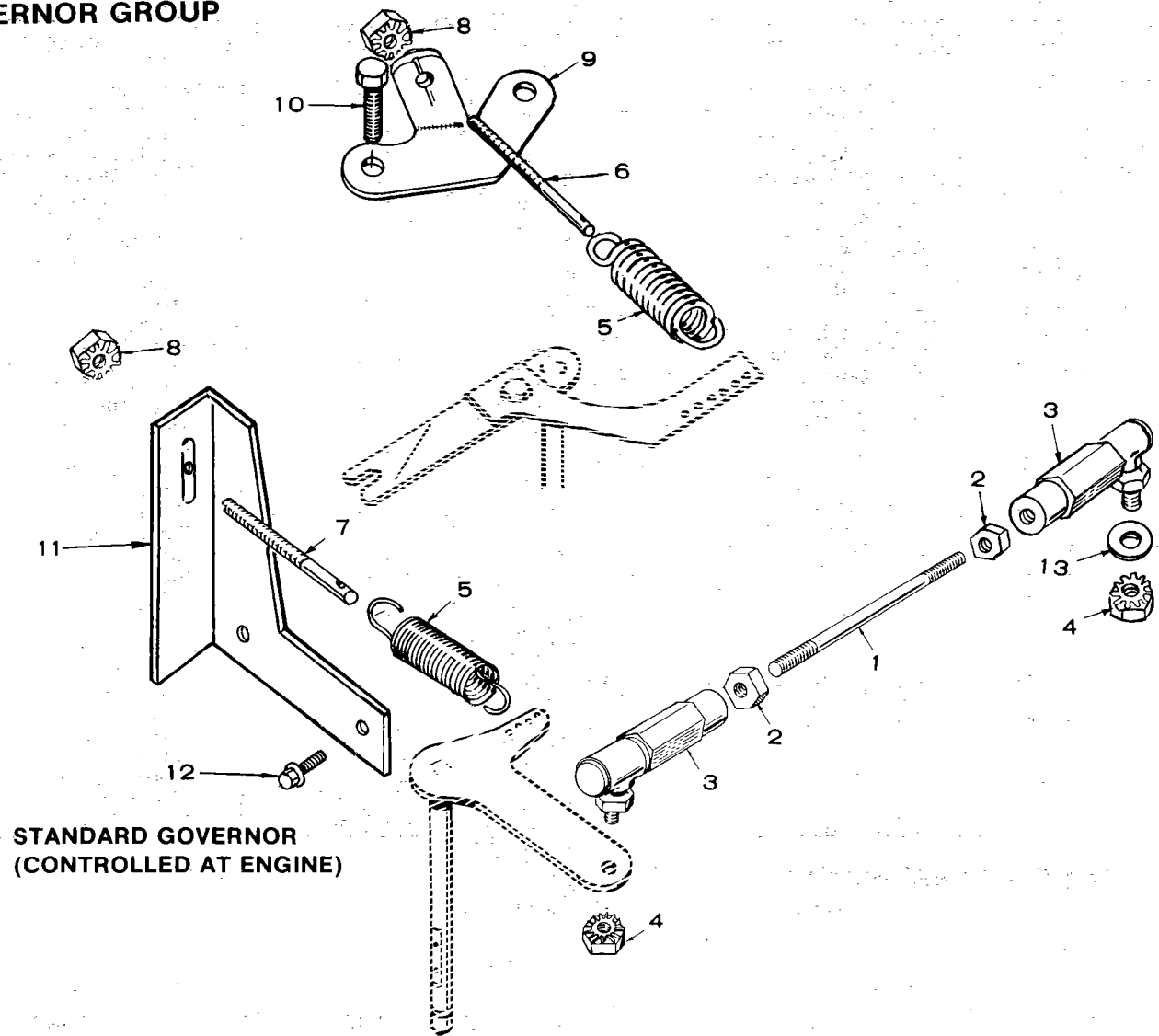
REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION	REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	503-0085	1	Hose, Fuel Inlet	23	154-1492	1	Manifold, Exhaust - High Profile (Side Outlet) - Optional
2	503-0688	1	Hose, Regulator Balance	24	155-1219	2	Clamp, Exhaust Manifold
3	502-0426	1	Adapter, Fuel Inlet	25	154-1493	1	Manifold, Exhaust - High Profile (Top Outlet) - Optional
4	502-0425	1	Elbow, Fuel Inlet (90°)	26	850-0050	4	Washer, Lock - Spring (3/8")
5	503-0131	2	Clamp, Hose - Fuel Hose	27	805-0018	2	Bolt, Place (3/8-16 x 1")
6	148-0738	1	Carburetor (LPG)	28	862-0003	2	Nut, Hex (3/8-16)
7	155-1216	1	Muffler	29	502-0313	1	Elbow, Carburetor to Balance Line
8	141-0281	2	Gasket, Carburetor Mounting	30	154-1643	1	Spacer, Carburetor to Manifold
9	520-0857	2	Stud, Carburetor Spacer Mounting	31	800-0026	2	Screw, Cap - Hex Head (5/16-18 x 3/4")
10	154-1774	1	Manifold, Intake	32	502-0020	1	Elbow, Street - Carburetor to Balance Line
11	154-1528	2	Gasket, Intake and Exhaust Manifold	33	505-0057	1	Plug, Pipe
12	149-0136	1	Cover, Fuel Pump Opening in Cylinder Block	34	332-0941	1	Tie, Fuel Line and Balance Line
13	149-0003	2	Gasket, Fuel Pump Opening Cover	35	148-0737	1	Regulator, Propane
14	526-0063	2	Washer, Flat - Copper (17/64" I.D. x 7/16" O.D. x 1/32" Thick)	36	148-0740	1	Coil, Vaporizer
15	800-0538	3	Screw, Cap - Hex Head (3/8-16 x 1-1/2")	37	505-0105	1	Nipple, Pipe (1/4 x 1-1/2")
16	868-0002	2	Nut, Hex - Jam (5/16-24)	38	502-0424	1	Connector, Hose
17	854-0017	4	Washer, Lock - IT (5/16")	39	502-0313	1	Elbow, Hose Connector
18	800-0004	2	Screw, Cap - Hex Head (1/4-20 x 3/4")	40	148-0741	1	Bracket, Regulator Mounting
19	800-0512	4	Screw, Cap - Hex Head (5/16-18 x 1")	41	520-0851	1	Stud, Intake Manifold and Regulator Assembly Mounting
20	850-0045	4	Washer, Lock - Spring (5/16")	42	148-0754	1	Support, Vaporizer Coil
21	154-1484	2	Adapter, Exhaust Manifold	43	526-0250	1	Washer, Flat (.407" I.D. x 1" O.D. x .125" Thick)
22	104-0091	1	Nut, Hex (3/8-24)	44	148-0739	1	Filter, Gas (With Vacuum Lock-off)
				45	503-0718	1	Hose, Vacuum
				46	503-0301	2	Clamp, Vacuum Hose
				47	502-0313	2	Elbow, Adapter to Hose
				48	501-0207	1	Line, Fuel
				49	502-0199	1	Elbow, Street (45°)

AIR CLEANER GROUP

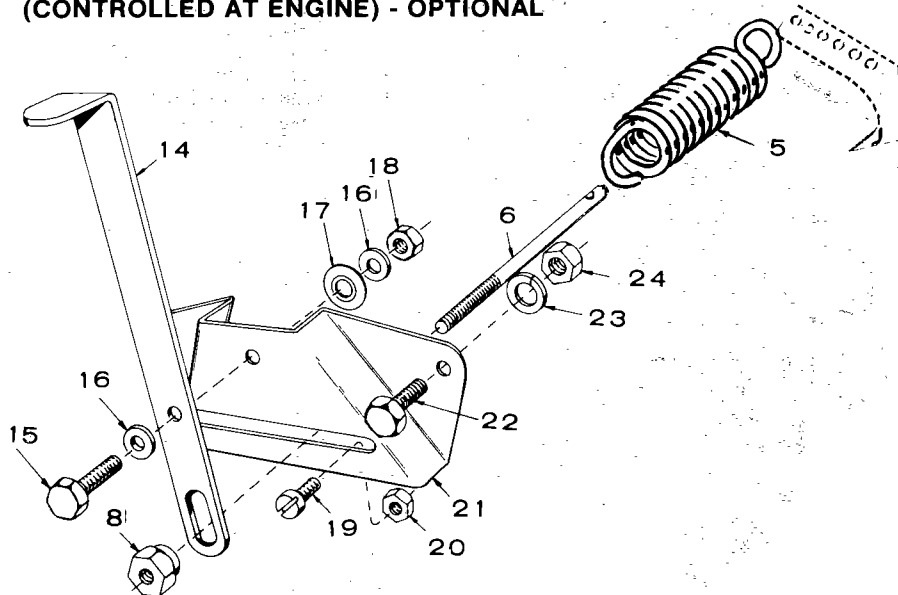


REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	140-1175	1	Filter, Air Cleaner - Disposable
2	140-1185	1	Gasket, Air Cleaner
3	503-0170	2	Clamp, Hose
4	503-0479	1	Hose, Flexible - Breather
5	503-0274	2	Clamp, Hose
6	140-1178	1	Adapter, Air Cleaner
7	140-1298	1	Hose, Air Inlet

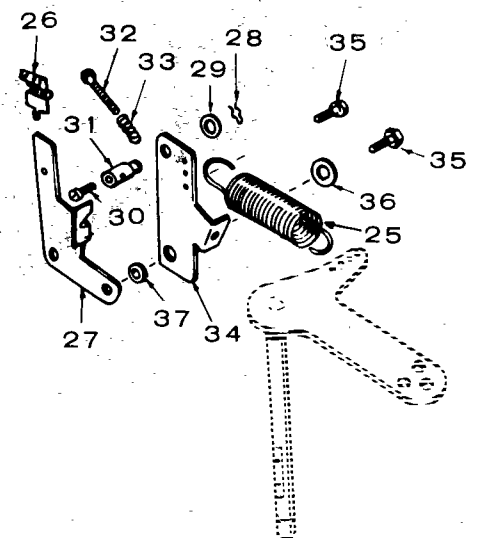
GOVERNOR GROUP



VARIABLE SPEED GOVERNOR (CONTROLLED AT ENGINE) - OPTIONAL



VARIABLE SPEED GOVERNOR (REMOTE CONTROLLED) - OPTIONAL



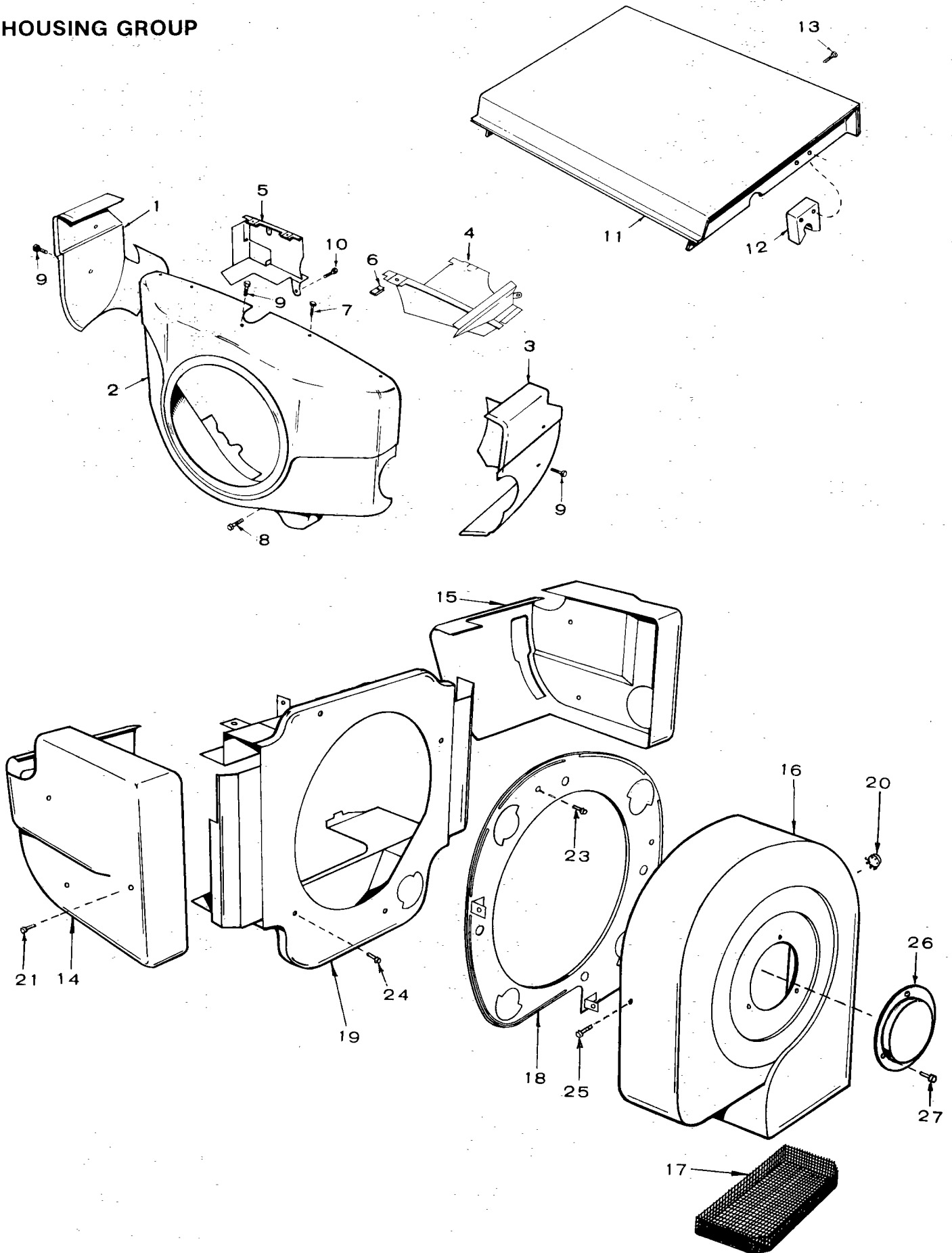
REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	STUD, LINKAGE		
	520-0839	1	Key 1
	520-0854	1	Key 2
2	870-0053	2	Nut, Hex (#10-32)
3	150-0639	2	Joint, Ball
4	870-0131	2	Nut, Hex W/ET (#10-32)
5	150-0098	1	Spring, Governor
6	150-1418	1	Stud, Speed Adjustment - Key 1
7	150-0096	1	Stud, Speed Adjustment - Key 2
8	870-0131	1	Nut, Hex W/ET (#10-32)
9	150-1262	1	Bracket, Speed Adjusting Stud - Key 1
10	821-0010	1	Screw, Cap - Hex Self Locking (1/4-20 x 1/2") - Key 1
11	150-1433	1	Bracket, Speed Adjusting Stud - Key 2
12	821-0009	2	Screw, Cap - Hex Self Locking (1/4-20 x 3/8") - Key 2
13	526-0196	1	Washer, Flat (7/32" I.D. x 7/16" O.D. x 1/8" Thick)
14	152-0095	1	*Arm Control
15	800-0005	1	*Screw, Cap - Hex Head (1/4-20 x 3/4")
16	526-0015	2	*Washer, Flat (9/32" I.D. x 9/16" O.D. x 1/16" Thick)
17	152-0041	1	*Washer, Spring Tension
18	870-0065	2	*Nut, Hex (1/4-20)
19	815-0199	2	*Screw, Machine - Fillister Head (#10-32 x 5/16")

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
20	870-0131	2	*Nut, Hex - W/ET (#10-32)
21	152-0190	1	*Bracket, Control
22	800-0003	2	Screw, Cap - Hex Head (1/4-20 x 1/2")
23	856-0006	2	Washer, Lock - ET (1/4")
24	862-0001	2	Nut, Hex (1/4-20)
25	150-1214	1	†Spring, Governor
26	518-0176	1	†Clip, Cable
27	150-1725	1	†Bracket, Cable
28	516-0059	1	†Pin, Cotter
29	526-0006	1	†Washer, Flat (15/64" I.D. x 1/2" O.D. x 3/64" Thick)
30	815-0104	1	*Screw, Machine - Fillister Head (#8-32 x 5/16")
31	152-0155	1	†Swivel, Cable Holding
32	815-0510	1	†Screw, Machine - Round Hex Slotted Head (#6-32 x .87")
33	150-1398	1	†Spring, Idle Setting
34	150-1435	1	†Arm, Governor Control
35	815-0456	2	Screw, Cap - Hex Self Locking (1/4-20 x 1/2")
36	526-0214	1	Washer, Flat (17/64" I.D. x 1/2 O.D. x 1/16" Thick)
37	150-1269	1	Bushing, Control Arm

* - Parts included in the Engine Mounted Variable Speed Governor.

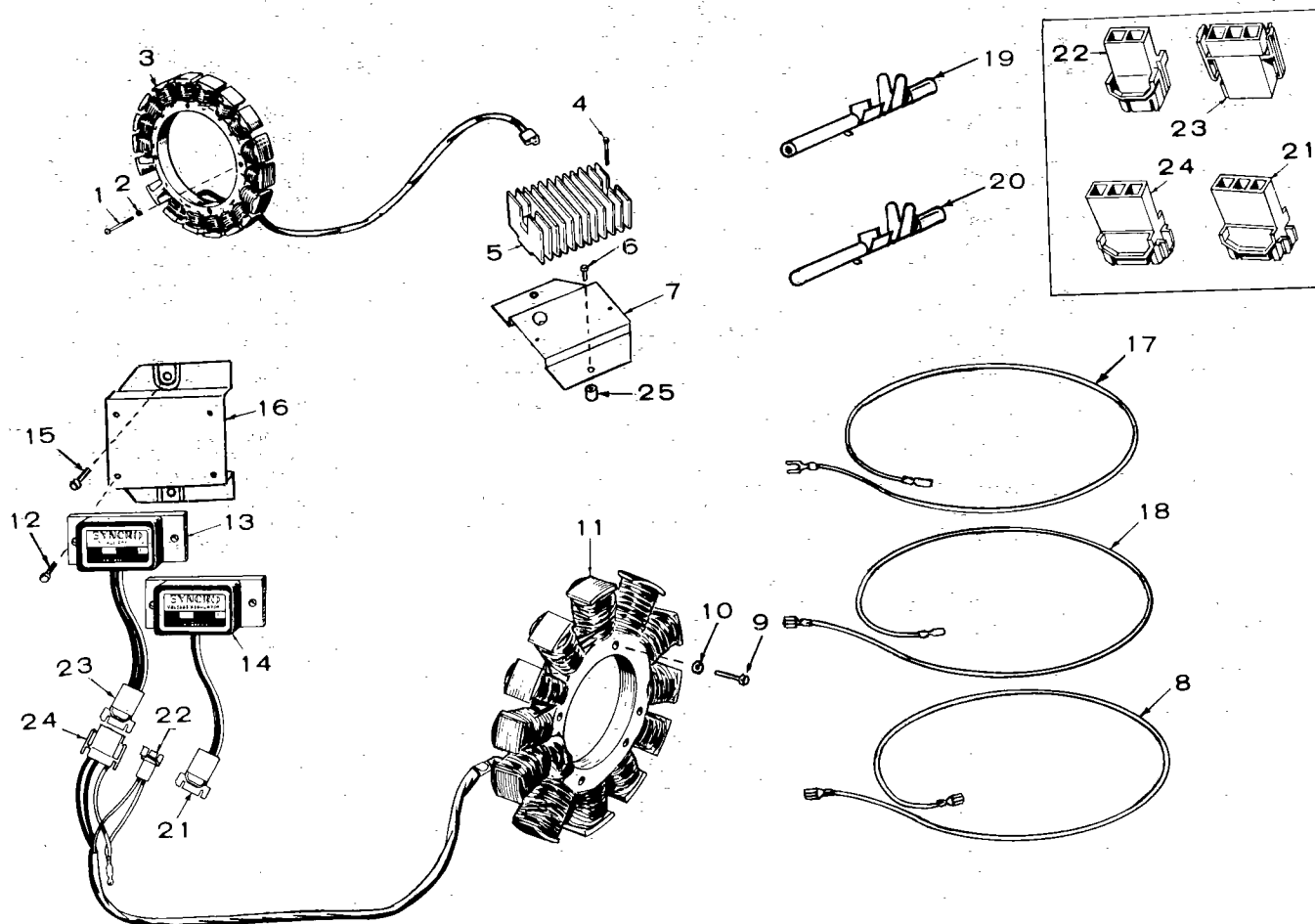
† - Parts included in the Remote Controlled Variable Speed Governor.

HOUSING GROUP



REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	134-3010	1	Housing, Air - Left Side - Key 1
2	134-3021	1	Housing, Blower - Key 1
3	134-3009	1	Housing, Air - Right Side - Key 1
4	134-3224	1	Support, Housing - Right Side - Key 1
5	134-2487	1	Support, Housing - Left Side - Key 1
6	870-0107	4	Nut, Speed (#14) - Key 1
7	809-0059	4	Screw, Machine - Round Head Tapping (1/4 x 1/2") - Key 1
8	821-0010	2	Screw, Cap - Hex Self Locking (1/4-20 x 1/2")
9	815-0261	5	Screw, Cap - Hex Self Locking Tapping (1/4-20 x 7/16") - Key 1
10	815-0370	4	Screw, Cap - Hex Head Tapping (1/4-20 x 1/2") - Key 1
11	405-1935	1	Hood, Engine - Optional - Key 1
12	405-1872	2	Clip, Hood - Optional - Key 1 (Part of Engine Hood)
13	821-0010	2	Screw, Cap - Hex Self Locking (1/4-20 x 1/2") - Key 1
14	134-2755	1	Housing, Air - Left Side - Key 2

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
15	134-2752	1	Housing, Air - Right Side - Key 2
16	134-2761	1	Scroll, Air (Includes Guard) - Key 2
17	134-2763	1	Guard, Scroll - Key 2
18	134-2747	1	Backplate, Scroll - Key 2
19	134-3232	1	Housing, Blower - Key 2
20	517-0021	1	Plug, Button - Key 2
21	821-0010	2	Screw, Cap - Hex Self Locking (1/4-20 x 1/2") - Key 2
22	870-0106	2	Nut, Speed (#14) - Key 2
23	821-0010	4	Screw, Cap - Hex Self Locking (1/4-20 x 1/2") - Key 2
24	815-0261	4	Screw, Cap - Hex Self Locking Tapping (1/4-20 x 7/16") - Key 2
25	821-0010	5	Screw, Cap - Hex Self Locking (1/4-20 x 1/2") - Key 2
26	134-3119	1	Cover, Scroll - Key 2
27	821-0009	3	Screw, Cap - Hex Self Locking (1/4-20 x 3/8")



CHARGING ALTERNATOR GROUP - OPTIONAL EQUIPMENT

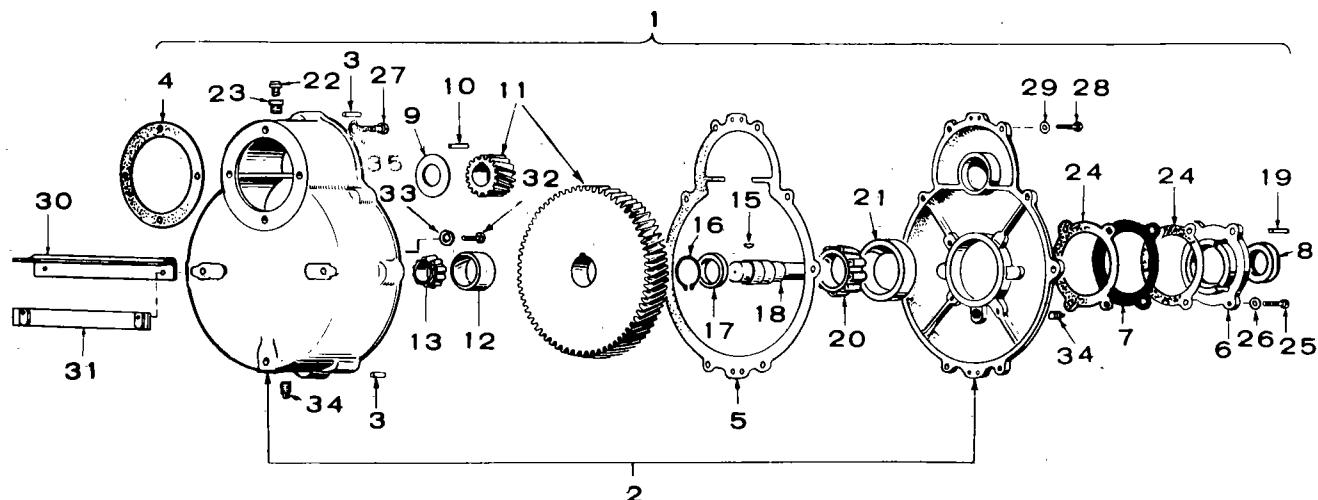
REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	813-0108	3	*Screw, Machine - Round Head Cross Recessed (#10-32 x 1-1/4")
2	850-0030	3	*Washer, Lock - Spring (#10)
3	191-0885	1	*Stator, Alternator (15 Amp)
4	821-0018	2	*Screw, Cap - Hex Self Locking (1/4-20 x 5/8")
5	191-0886	1	*Regulator, Voltage
6	821-0012	2	*Screw, Cap - Hex Self Locking (1/4-20 x 1-1/8")
7	191-1078	1	*Bracket, Mounting Regulator
8	336-2192	1	Lead, Regulator to Terminal Board
9	813-0108	3	†Screw, Machine, Round Head - Cross Recessed (#10-32 x 1-1/4")
10	850-0030	3	†Washer, Lock - Spring (#10)
11	191-0937	1	†Stator, Alternator (20 Amp)
12	815-0181	4	†Screw, Cap - Hex Head - W/ET (#10-32 x 5/16")
13	191-0938	1	†Rectifier, Current
14	191-0939	1	†Regulator, Voltage
15	821-0010	2	†Screw, Cap - Hex Self Locking (1/4-20 x 1/2")
16	191-1107	1	†Bracket, Mounting - Rectifier-Regulator

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
17	336-2222	1	†Lead, Electrical - Optional
18	336-2236	1	†Lead, Electrical - Optional
19	323-0488	5	†Contact, Connecting - Female
20	323-0496	5	†Contact, Connecting - Male
21	323-0880	1	†Plug, Connector (2 Female Contacts)
22	323-0879	1	†Cap, Connector (2 Male Contacts)
23	323-0882	1	†Plug, Connector (3 Female Contacts)
24	323-0881	1	†Cap, Connector (3 Male Contacts)
25	134-2100	2	*Spacer, Regulator Bracket Mounting

* - Parts included in the 12 Volt 15 Amp Phelon Alternator System.

† - Parts included in the 12 Volt 20 Amp Synchro Alternator System.

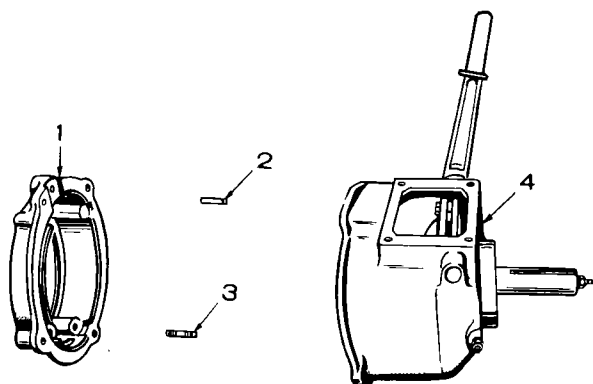
NOTE: Flywheel with Alternator-Magnet Ring is shown in the Crankshaft and Flywheel Group.



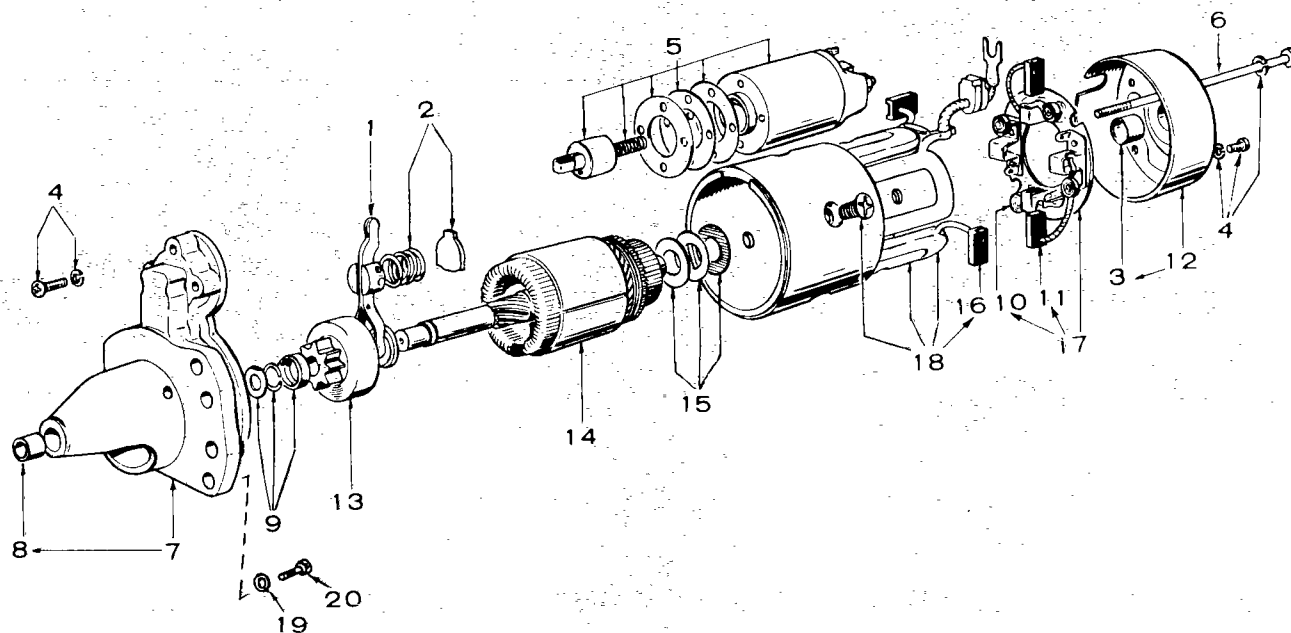
REDUCTION GEAR BOX GROUP (OPTIONAL EQUIPMENT) (3.3 to 1 Ratio)

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION	REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	REDUCTION GEAR ASSEMBLY			20	510-0023	1	Race, Inner with Roller Bearings - (Cone)
	190-0440	1	Right Hand Horizontal	21	510-0024	1	Race, Outer, Roller Bearing - (Cup)
	190-0444	1	Left Hand Horizontal	22	518-0172	1	Vent
	190-0445	1	Vertical Down	23	505-0007	1	Reducer, Pipe (1/4 x 1/8")
2	HOUSING, GEAR ASSEMBLY			24	190-0306	2	Gasket - Bearing Plate to Housing Cover
	190-0300	1	Vertical Down Box	25	800-0007	4	Screw, Cap - Hex Head (1/4-20 x 1")
	190-0050	1	Right and Left Hand Horizontal Box	26	526-0063	4	Washer, Flat Copper (17/64" ID x 7/16 OD x 1/32 THK)
3	516-0012	2	Pin, Dowel	27	800-0028	4	Bolt, Hex Head (5/16-18 x 1")
4	190-0020	1	Gasket - Housing to Engine	28	800-0028	8	Screw, Cap - Hex Head (5/16-18 x 1")
5	190-0021	1	Gasket - Cover to Housing	29	850-0045	8	Washer, Lock Spring (5/16")
6	190-0016	1	Plate, Retaining - Bearing	30	190-0297	1	Bracket, Support, Housing - Vertical Down Box
7	190-0115	1	Shim Set (Includes 1 Each of Following Sizes: .005", .009", .012", .016", .020", .025")	31	190-0298	1	Nut Bar, Support Bracket - Vertical Down Box
8	509-0016	1	Seal, Oil	32	800-0026	2	Screw, Cap - Hex Head (5/16-18 x 3/4") - Vertical Down Box
9	190-0195	1	Washer, Pinion Gear	33	526-0065	2	Washer, Flat Copper (21/64 ID x 7/16 OD x 1/16 THK) - Vertical Down Box
10	515-0142	1	Key, Pinion Gear	34	505-0054	2	Plug, Pipe (1/4)
11	190-0447	1	Gear Set	35	850-0045	4	Washer, Lock - Spring (5/16")
12	510-0022	1	Race, Outer, Roller Bearing - (Cup)				
13	510-0021	1	Race, Inner with Roller Bearings - (Cone)				
15	515-0159	1	Key, Woodruff				
16	518-0013	1	Ring, Retaining				
17	190-0202	1	Spacer, Bearing				
18	190-0192	1	Shaft, Take Off, Power				
19	515-0103	1	Key, Woodruff				

CLUTCH GROUP (OPTIONAL EQUIPMENT)



REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
1	190-0171	1	Adapter, Clutch to Engine
2	515-0041	1	Key, Clutch
3	STUD, CLUTCH HOUSING TO ENGINE		
	520-0738	1	3/8-16 x 4"
	520-0739	2	3/8-16 x 3"
4	190-0288	1	Clutch Assembly
	190-0289	1	Clutch Kit - Includes Complete Clutch, Adapter, Mounting Hardware and Instructions



STARTING MOTOR PARTS GROUP

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
	191-1052	1	Motor, Starting
1	191-0983	1	Lever, Clutch
2	191-0984	1	Spring - Plate Set
3	191-1010	1	Bearing, Sleeve (Rear)
4	191-1011	1	Screw Set
5	191-0987	1	Solenoid, Clutch
6	191-0988	2	Bolt, Machine (Through)
7	191-1086	1	Bracket, Starter - Front (Includes Bearing)
8	191-0971	1	Bearing, Sleeve (Front)
9	191-0991	1	Stop - Retaining Set, Pinion Gear
10	191-1007	4	*Spring, Helical, Compression (Brush)

REF. NO.	PART NO.	QTY. USED	PART DESCRIPTION
11	191-1008	2	*Brush, Starter (Negative)
12	191-1009	1	Bracket, Starter - Rear (Includes Bearing)
13	191-1087	1	Clutch - Pinion Gear, Starter
14	191-1088	1	Armature, Starter
15	191-0997	1	Washer - Insulator Set
16	191-1005	2	Brush, Starter (Positive)
17	191-1006	1	Holder, Brush (Includes Parts Marked *)
18	191-1089	1	Coil, Field, Starter (Includes Positive Brushes)
19	850-0050	2	Washer, Lock, Spring (3/8)
20	800-0051	2	Screw, Cap, Hex Head (3/8-16 x 1-1/4")

* - Included in Brush Holder.

SERVICE KITS AND MISCELLANEOUS

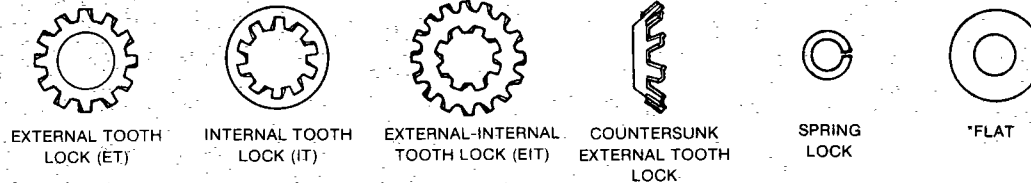
NOTE: For Additional Kits, refer to the Applicable Parts Group in Question.

PART NO.	QTY. USED	PART DESCRIPTION
168-0122	1	Kit, Gasket, Complete Engine
168-0121	1	Kit, Gasket, Carbon Removal
522-0278	1	Kit, Engine Overhaul
525-0137	1	Paint, Touch-Up, Metallic Green (16 oz. pressurized can)
525-0305	1	Paint, Touch-Up, Non-Metallic Green (13 oz. pressurized can)

HARDWARE IDENTIFICATION

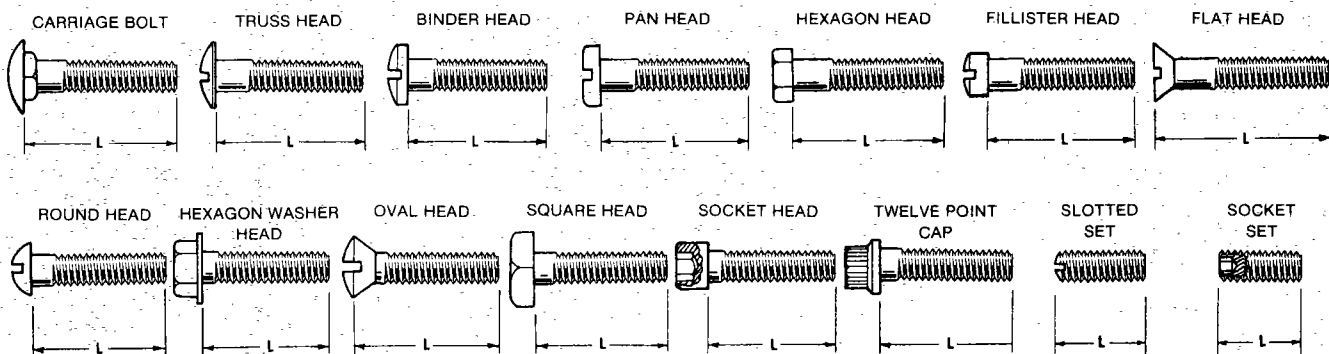
Illustrated hardware items are only for identification purposes. All hardware items listed throughout this parts catalog are steel SAE grade five (5) or lower (zinc plated with clear chromate dip) unless parts description indicates differently. All dimensions are in inches.

WASHER TYPES



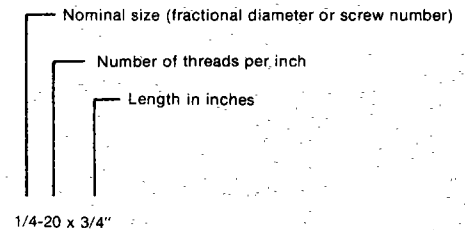
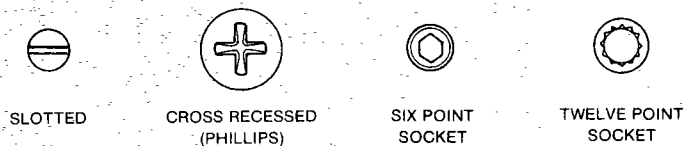
* - Flat washer dimensions given are: Inside Diameter (ID), Outside Diameter (OD) and Thickness (Thk).

BOLT AND SCREW TYPES



L - Measure length between these points.

INTERNAL DRIVE TYPES



NUT TYPES



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A Subsidiary of
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